

c)

we run the code and got those required results:

$$g(x)_{\text{bar}} = -0.006306001966330276 x + 0.003370129227025073$$

$$E_{\text{out}} = 0.5293858342032085$$

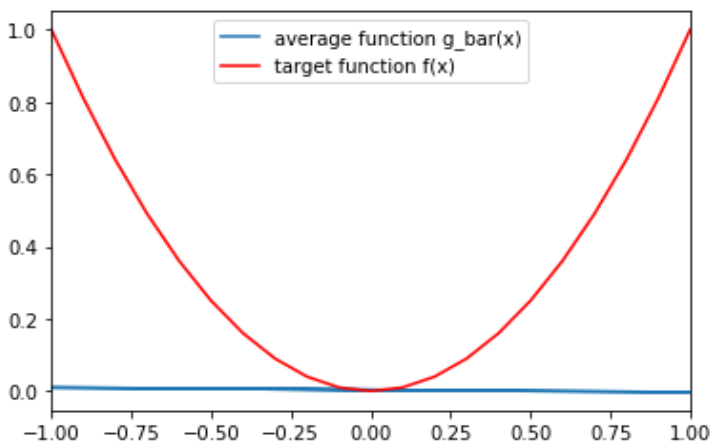
$$\text{Variance} = 0.34014236999732966$$

$$\text{Bias} = 0.1936069894695096$$

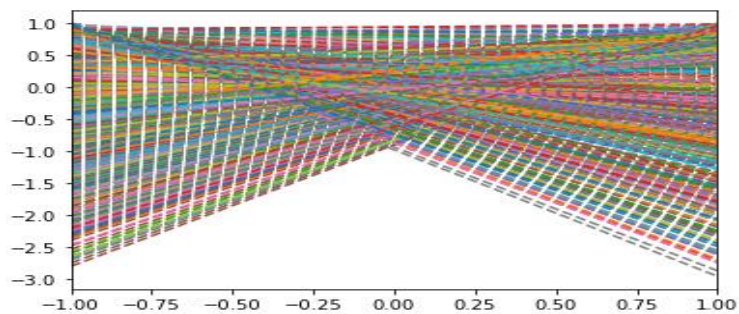
$$\text{bias} + \text{variance} = 0.5337493594668392$$

we can notice that E_{out} is very close to $\text{bias} + \text{variance}$.

The plot of the target function $f(x)$ and the average hypothesis $g(x)_{\text{bar}}$:



The N constructed lines corresponding to the N drawn datasets:



We can visually notice that the average hypothesis is $g(x)=0$